NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT FACTSHEET

October 2017

Permittee Name:	Mobil Oil Mariana Islands, Inc. – Mobil Saipan Terminal
Mailing Address:	P.O. Box 500367 Saipan, MP 96950
Facility Location:	Petroleum Lane Puerto Rico Village, MP 96950
Contact Person:	Maria Kemp, CNMI Field Operations Manager (670) 236-8122
NPDES Permit No.:	MP0020397

I. STATUS OF PERMIT

Mobil Oil Mariana Islands, Inc. (the "permittee") applied for a National Pollutant Discharge Elimination System ("NPDES") permit to authorize the discharge of stormwater, tank bottom water draws, hydrostatic test water, and miscellaneous maintenance discharges from the Mobil Saipan Terminal to the Tanapag Harbor. A complete application was submitted on February 25, 2016 and updated on April 14, 2016, with additional monitoring data. The permittee submitted a mixing zone analysis on June 30, 2017 and an updated analysis on September 5, 2017.

EPA developed this permit and factsheet pursuant to Section 402 of the Clean Water Act ("CWA"), which requires point source dischargers to control the amount of pollutants that are discharged to waters of the United States through obtaining an NPDES permit. The permittee currently is discharging under NPDES permit MP0020397, which became effective on 9/1/2011. Pursuant to 40 CFR 122.21, the terms of the existing permit are administratively extended until the issuance of a new permit.

This permittee is classified as a minor discharger.

II. GENERAL DESCRIPTION OF FACILITY

The Mobil Saipan Terminal ("facility," "permittee," or "discharger") is a petroleum bulk storage and distribution terminal located at the Saipan Seaport ("Port") in the Commonwealth of the Northern Mariana Islands ("CNMI"). Bulk fuels are delivered to the facility at the commercial dock. Bulk fuels are stored at the facility and distributed via tank trucks to company-owned service stations and to commercial and government accounts throughout Saipan. The facility also supplies diesel fuel to marine vessels at the Port's dock.

Products handled at the facility include motor gasoline, jet fuel, and diesel. Lubricants and hydraulic fluids are associated with oil-filled operational equipment. In the event of a fire,

chemical foaming agents are used in firefighting water. These chemical foaming agents are not used during fire water system testing. The permit prohibits the discharge of any chemical firefighting foaming agents during firefighting water system testing or during normal operations.

In 1994, Mobil Saipan upgraded its oil-water separator and sought a "Land Disposal of Waste Water Permit" from the CNMI Bureau of Environmental and Coastal Quality ("BECQ") to discharge stormwater into percolation fields. The facility also has NPDES permit coverage under EPA's multi-sector general permit ("MSGP") (i.e. permit number NIR05A088) and is applicable to stormwater not authorized by this individual permit (i.e. yard drainage). Therefore, this permit authorizes the discharge of industrial wastewater, hydrostatic test water, and other stormwater discharges not authorized by the MSGP. Specifically, stormwater collected in the containment areas (i.e. tank, loading rack, and drum areas) flow to an oil and water separator and then discharged to the Port's sewer system, which flows to the Harbor.

All storage areas are concrete-paved, including a diked containment area for stormwater, the storage tanks and containment area, the tank truck loading rack, and the facility yard. The paved area at the facility's truck loading station drains only to an oil-water separator. Dry clean-up practices are used to control release of pollutants from drips and minor leaks into containment areas to minimize the potential for oil and grease in the stormwater discharge.

III. DESCRIPTION OF RECEIVING WATER

Discharges from the facility flow directly into the Port's storm sewer and then to the Tanapag Harbor. The storm sewer is an underground box culvert 6 feet (ft) wide by 3 ft high. The Port's storm sewer discharges to Tanapag Harbor approximately 900 ft from the location where the facility's discharges into the storm sewer. The point of monitoring and compliance for the facility is Outfall 001, located after the facility's oil-water separator and lift station and before the tie-in to the Port's sewer system. Tanapag Harbor is approximately 164 ft (50 meters (m)) wide and 433 ft (132 m) long on its west side and 266 ft (81 m) long on its east side.

Under *CNMI Water Quality Standards*, Tanapag Harbor is designated as a "Class A Marine Water." Class A waters in Saipan are limited to existing harbors and an area around the Agingan Wastewater Treatment Plant outfall. Water quality criteria for Class A waters protect recreational and aesthetic enjoyment uses.

Other designated uses are allowed if they are compatible with the protection and propagation of fish, shellfish, and wildlife, and recreation in and on these waters. Class A waters shall be kept clean of solid waste, oil and grease, and shall not act as receiving waters for any effluent, which has not received the best practicable degree of under existing technology and economic conditions and is compatible with other Class A standards.

The Tanapag Harbor (i.e. coastal waters in the North W. Takpochao watershed) is listed as impaired for dissolved oxygen and for enterococci and is not attaining the aquatic life and propagation and the recreational designated uses. (CNMI 2014). Insufficient information exists to evaluate other designated uses. This watershed contains the harbor, a marina, a seaplane ramp, the Channel Bridge, and a closed municipal dump.

IV. DESCRIPTION OF THE DISCHARGE

Outfall 001 discharges to the CPA storm sewer through a concrete-encased PVC pipe at a vertical angle of 0° (horizontal with respect to the channel bottom). The pipe diameter is 0.305 m (12 inches). Because the facility stores storm water in containment areas and treats it through the oil-water separators at a controlled rate, Outfall 001 may typically discharge to the storm sewer when there is no storm water from the Port drainage area flowing through the sewer. The CPA storm sewer discharges to Tanapag Harbor in the southwest corner adjacent to the west side of the dock. The Port's storm sewer exit is 3 feet above the water surface. However, the storm sewer exit may occasionally be at the water surface during high tide or partially submerged during tropical storms/typhoons.

Discharges via outfall 001 (into the Port's storm sewer) consists of stormwater, storage tank bottom water draws, hydrostatic testing, firefighting and system tests, service water system leaks, and maintenance activities.[1] Most discharges consist of stormwater (i.e. 90% of flow) and therefore, flows vary. The stormwater flows come from 157,707 square feet and do not come into contact with stored materials. Stormwater flows in 2013 and 2014, were, on average, 7,833 and 12,803 gallons per day, respectively.

The terminal lift station operates on level control and the normal pumping rate is 600 gpm. The pumps do not operate at variable flow rates (i.e. when the facility discharges, the flow rate is 600 gallons per minute until the discharge stops). At this pump rate, the pumping durations associated with the maximum and long-term average flow rates are 99 minutes/day and 14.8 minutes/day, respectively. *See* table 1 for flow information.

Table 1. Flow Source Estimates from NPDES Permit Application.

Flow Source	Frequency	Flow	
	Average months/year	Maximum daily flow rate (GPD)	Duration (days)
Hydrostatic testing	2	600	2
Storage tank water draws	4	10	4
Fire system testing, leaks, firefighting	12	380	4
Service water system leaks/maintenance	12	10	14
Stormwater	Variable	59,593*	NA

* The maximum flow rate in gallons per day, as reported in the 2017 mixing zone analysis. The discharged occurred over 99 minutes.

[1] Stormwater runoff from the yard area at the terminal does not flow to the oil-water separators. Runoff from the yard area flows into a catch basin, which flows directly into the lift station, and then into the Port's sewer system. Drainage from a vehicle onsite parking area also flows to a catch basin that ties into the Port's sewer system downstream of Outfall 001, and therefore does not flow through the oil-water separators. The connection valve from this catch basin to the Port's sewer will be normally closed except to drain the area during heavy rainfall conditions. No industrial activities occur in the yard or parking areas. As part of the Pollution Prevention Plan, the permit contains requirements for best management practices ("BMPs") to be implemented in the yard and parking areas to minimize pollutant loads during storm events, consistent with permit coverage under the MSGP.

Other wastewater generated, and subsequently discharged via Outfall 001, include tank draw waters and hydrostatic test waters. The storage tank bottom water draws occur when water has separated from the stored petroleum product because of density differences. As this water coalesces and then settles to the bottom of the tank, compounds including benzene, toluene, ethylbenzene and xylene (BTEX) and polycyclic aromatic hydrocarbons (PAHs) can partition and dissolve into the water. The partitioning and dissolution allows the concentrations of some of the more soluble and denser petroleum components to reach toxic levels. Terminal operators drain this layer of water to prevent transfer with the finished product as well as to free up storage space in the tank. Hydrostatic testing involves filling pipes with fluid under pressure and monitoring pressure drops over time. If the system maintains constant pressure, there are no leaks within the pipe.

As described above, discharges are treated by one of two oil-water separators. The separators can be operated in parallel, or only one separator can be used, depending on the volume of water requiring treatment and the targeted rate of treatment. Wastewater from the separators flows by gravity into a 3,800-gallon lift station. Treated wastewater will be pumped in a 12-inch diameter concrete-encased PVC pipe to a point where it will enter the Port's storm sewer system, at N 15°13'29", E 145°44'5". The sewer system then discharges to Tanapag Harbor. Typical flow through the lift station will be 600 gpm, but up to 1,200 gpm can be pumped through the lift station under extreme conditions, such as if the tank farm is flooded.

As part of the application for permit renewal, the permittee provided data from an analysis of the facility's treated wastewater discharge, shown in Table 2. Pollutants believed to be absent or not detected in the effluent are not included.

Table 2. Discharge Data at Outfall 001.

Parameter	Units	Discharge Data[1]		
		Daily Maximum	30-day Maximum	Long Term Average
Flow	Gallons/day	72,048[2]	72,048[2]	9,241
pH	S.U.	7.2 to 9.2	7.2 to 9.2	--
Biochemical Oxygen Demand, 5-day (BOD_5)	mg/L	20	10	--
Chemical Oxygen Demand	mg/L	100	35	--
Total Organic Carbon	mg/L	35	10	--
Arsenic	µg/L	2.2	2.2	<1.7
Chromium, total	µg/L	1.6	1.6	<1
Copper	µg/L	7.5	7.5	5.2
Lead	µg/L	102[3]	12.5	<1.5
Nickel	µg/L	1.3	1.3	<1.1
Zinc	µg/L	233	233	107
Xylene	µg/L	Not sampled		
Benzene	µg/L	7.6	7.6	<1

Parameter	Units	Discharge Data[1]		
		Daily Maximum	30-day Maximum	Long Term Average
Ethylbenzene	µg/L	1.2	1.2	<1
Toluene	µg/L	70	70	<2.8
Naphthalene	µg/L	4.5	4.5	<1.2
Ammonia, unionized[4]	µg/L	2.9	2.9	<0.16
Total Suspended Solids (TSS)	mg/L	26	26	1.25
Oil and Grease	mg/L	2.7[5]	2.7	<1.1

1 Based on permittee's NPDES renewal application and supplemental data.
2 The permittee reported the highest on the DMRs as 59,593 gallons per day.
3 The permittee reported 102 ug/L on DMR monitoring period ending on 9/30/2016.
4 Un-ionized ammonia cannot be measured directly. However, total ammonia can be measured, and the un-ionized portion may be calculated using the pH, temperature, and salinity of the sample. For an example of how unionized ammonia is calculated *see* www.dep.state.fl.us/labs/docs/unnh3sop.doc. The permittee reported 2.9 ug/L on DMR monitoring period ending on 3/31/2016.
5 The permittee reported 2.7 mg/L on DMR monitoring period ending on 2/28/2017.

V. SIGNIFICANT CHANGES FROM PREVIOUS PERMIT TERM

Table 3. Changes from Previous Permit Term

Permit Condition	Previous Permit (2010 – 2015)	Re-issued permit (2017 – 2022)	Reason for change
Effluent Limitations	Effluent limits for only oil and grease	Establishes effluent limits for TSS, pH, phosphorus, arsenic, copper, lead, manganese, zinc, and benzene as well as oil and grease	Previous permit didn't include effluent limits because the facility had not discharged prior to seeking permit coverage. The draft permit contains effluent limits based on BPJ for TSS and oil and grease as well as water quality-based effluent limits for pH, phosphorus, metals, and benzene because reasonable potential exists for these pollutants.
	Not applicable – previous permit did not contain effluent limits	Authorizes dilution for pH, phosphorus, arsenic, manganese, copper, benzene, and zinc water quality-based effluent limits	Dilution based on permittee's mixing zone analysis (September 2017).
	Not applicable – previous permit did not contain effluent limits	Establishes monitoring to be once per discharge for pollutants with effluent limits and for flow	Discharge is intermittent so monitoring frequency adjusted based on actual discharges. Data collected will be used to characterize the discharge and to determine whether reasonable potential exists. Flow monitoring ensures that conditions in mixing zone analysis are representative of the discharge.

Permit Condition	Previous Permit (2010 – 2015)	Re-issued permit (2017 – 2022)	Reason for change
Monitoring Frequency	None	Requires quarterly BOD monitoring	BOD monitoring will help determine compliance with narrative water quality standards.
	Monthly temperature and salinity monitoring	Reduces monitoring for temperature and salinity to quarterly	Extensive monitoring requirements were included in the previous permit to collect data for the next permit term since the facility had not discharged prior to seeking permit coverage. Temperature and salinity monitoring will help determine compliance with narrative water quality standards.
	Monthly toluene and ethylbenzene, quarterly for remaining VOCs, and annual monitoring for remaining priority toxic pollutants	Quarterly monitoring for Group I PAHs and Group II PAHs (i.e. 16 priority pollutants) and annual monitoring for chromium III and chromium IV	Quarterly monitoring of PAHs will provide sufficient data to characterize the discharge (as opposed to the 126 priority pollutants). Also, discharge data shows measurable concentrations of a few VOCs (i.e. benzene and toluene) and one semi-volatile organic (naphthalene). The permittee did not provide chromium III and chromium IV data, as required by the previous permit, so the annual monitoring requirement is carried over in this permit to determine if reasonable potential exists.
	None	Annual monitoring for enterococci	Annual monitoring for enterococci is required because the receiving water is impaired for enterococci, and monitoring for pollutants causing impairments is consistent with the approach used in EPA's MSGP.
	Monthly ammonia monitoring	Removes ammonia monitoring	Ammonia did not have reasonable potential based on 44 different analysis, and therefore, the draft permit does not require ammonia monitoring.
	Monthly toluene and ethylbenzene monitoring	Removes toluene and ethylbenzene monitoring	Permit contains a water quality-based effluent limit for benzene, which acts as an indicator pollutant. Also, reasonable potential did not exist for toluene or ethylbenzene.

The permit also contains electronic reporting requirements for DMRs, consistent with EPA's final rule, NPDES Electronic Reporting Rule (effective December 2015), an updated definition of MDL consistent with EPA's final rule, CWA Methods Update Rule for the Analysis of Effluent (effective September 27, 2017), and requirements contained in EPA's final rule, Use of Sufficiently Sensitive Test Methods for Permit Applications and Reporting (effective September 2014).

VI. DETERMINATION OF NUMERICAL EFFLUENT LIMITATIONS

EPA has developed effluent limitations and monitoring requirements in the permit based on an evaluation of the technology used to treat the pollutant (e.g., "technology-based effluent limits") and the water quality standards applicable to the receiving water (e.g., "water quality-based effluent limits"). EPA has established the most stringent of applicable technology-based or water quality-based standards in the permit, as described below.

A. Applicable Technology-Based Effluent Limitations

Permits issued to non-POTWs must require compliance with a level of treatment performance equivalent to Best Practicable Control Technology Currently Available ("BPT"), Best Available Technology Economically Achievable ("BAT"), or Best Conventional Pollutant Control Technology ("BCT") for existing sources, and consistent with New Source Performance Standards ("NSPS") for new sources. Where federal effluent limitations guidelines ("ELGs") have been developed for a category of dischargers, the TBELs in a permit must be based on the application of these guidelines.

There are no applicable ELGs for petroleum bulk storage terminals (i.e. SIC 5171). EPA considered the need for ELGs for petroleum bulk storage terminals in the Technical Support Document for the 2004 Effluent Guidelines Program Plan but concluded that regulation of this industry category under individual permits was adequate (EPA 2004).

If ELGs are not available, a permit must include requirements at least as stringent as BPT/BAT/BCT developed on a case-by-case using best professional judgment ("BPJ") in accordance with the criteria outlined at 40 CFR 125.3(d). EPA is proposing effluent limits for total suspended solids and for oil and grease based on BPJ.

B. Water Quality-Based Effluent Limitations

Water quality-based effluent limitations are required in NPDES permits when the permitting authority determines that a discharge causes, has the reasonable potential to cause, or contributes to an excursion above any water quality standard (40 CFR 122.44(d)(1)).

When determining whether an effluent discharge causes, has the reasonable potential to cause, or contributes to an excursion above narrative or numeric criteria, the permitting authority shall use procedures which account for existing controls on point and non-point sources of pollution, the variability of the pollutant or pollutant parameter in the effluent, the sensitivity of the species to toxicity testing (when evaluating whole effluent toxicity) and where appropriate, the dilution of the effluent in the receiving water (40 CFR 122.44(d)(1)(ii)).

EPA evaluated the reasonable potential to discharge toxic pollutants according to guidance provided in the *Technical Support Document for Water Quality-Based Toxics Control* (TSD) (Office of Water Enforcement and Permits, U.S. EPA, March 1991) and the *U.S. EPA NPDES Permit Writers Manual* (Office of Water, U.S. EPA, December 1996). These factors include:

1. Applicable standards, designated uses and impairments of receiving water

2. Dilution in the receiving water
3. Type of industry
4. History of compliance problems and toxic impacts
5. Existing data on toxic pollutants - reasonable potential analysis

1. Applicable Standards, Designated Uses and Impairments of Receiving Water

CNMI adopted water quality criteria in January 1997, which were later amended in 2004 and in 2014. Revisions in 2014, among other things, included updates to antidegradation review, definitions, microbiological requirements (i.e. enterococci for marine waters), reference to EPA's criteria (2013) for toxic pollutants, compliance schedule authorization, criteria for mixing zones, and use of numeric biological indices.

Marine waters in CNMI are classified as either AA or A. The Tanapag Harbor is a Class A Marine Water and therefore designated for recreational purposes and aesthetic enjoyment. Other uses are also allowed if it is compatible with the protection and propagation of fish, shellfish, and wildlife, as well as compatible with recreation. The *CNMI Water Quality Standards* further specify: "Such waters shall be kept clean of solid waste, oil and grease, and shall not act as receiving waters for any effluent which has not received the best degree of treatment of control practicable under existing technology and economic conditions and compatible with standards established for this class." Tanapag Harbor is listed as impaired according to the CWA Section 303(d) List of Water Quality Limited Segments for enterococci and dissolved oxygen. No TMDLs exist for the Tanapag Harbor.

2. Dilution in the Receiving Water

Part 500 of the *CNMI Water Quality Standards* allow BECQ to authorize mixing zones in receiving waters if certain conditions are met. A mixing zone is generally expressed as a limited area or volume of water where initial dilution of a discharge takes places and where certain water quality criteria may be exceeded. Per the CNMI water quality standards, a mixing zone means an area of specified dimensions where a discharge undergoes initial dilution within a specified sub-area of the mixing zone in the immediate vicinity of the discharge point (zone of initial dilution, or ZID), then undergoes secondary mixing to the limit of the mixing zone boundary. A mixing zone is an allocated impact zone where water quality criteria can be exceeded but where acutely toxic conditions are prevented (except as defined within the ZID) and where public health and welfare are not endangered.

The permittee submitted a *Mixing Analysis for Mobil Oil Saipan Terminal (NPDES Permit No. MP0020397)* (June 2017) and *Addendum Mixing Analysis for Mobil Oil Saipan Terminal (NPDES Permit No. MP0020397)* (September 2017) that evaluated available dilution using CORMIX software. EPA evaluated the available dilution and is basing the authorized mixing zones on the ZID to ensure that the mixing zone is as small as possible and to prevent lethality to passing organisms.

EPA is authorizing a 63.8-meter (209 ft) mixing zone (dilution factor of 2.2) for arsenic, copper, manganese, zinc, and benzene and a 18.95-meter mixing zone (dilution factor of 13.1) for phosphorus. The difference is due to the influence of tides and the resulting height of the

surface water at time of discharge. The 63.8-m mixing zone models the CPA sewer at the same height as the water surface, which is likely to occur 1% of the time (i.e. maximum high tide of 3 feet[2]). The 18.95-meter mixing zone models the discharge as a short free fall into the water, which occurs during a normal tide. Because the free fall results in an increase in discharge velocity, dilution is higher and mixing occurs faster. However, all other modelled parameters are the same (i.e. flow rate of 600 gpm, density, temperature, etc.). Therefore, both modeled scenarios represent reasonable worst-case scenarios.

Authorization of these mixing zones are consistent with the CNMI water quality standards, as follows:

- *Establishment of Mixing Zone (WQS 9.1)*: The function or operation involved in the discharge is in the public interest, and the discharge does not substantially endanger public health and safety. The facility is constructed on land leased from the Port and is operated by the permittee. Bulk petroleum products are delivered to the terminal at the commercial dock. Products managed at the terminal include motor gasoline, jet fuel, and diesel. Bulk fuels are stored at the facility and distributed by tank trucks to company-owned service stations and to commercial and government accounts throughout Saipan. The terminal also supplies diesel fuel to marine vessels at the Port's dock. There are no drinking water intakes and limited public interaction within the vicinity of the discharge since the dock is owned by the Port. Therefore, the authorized dilution is consistent with WQS 9.1.

- *Prevention, Control, and Abatement (WQS 9.2)*: The permittee uses an oil-water separator to treat the wastewater prior discharge. There is no other technology available that is adequate for the prevention, control, or abatement of the discharge. Therefore, the discharge and establishment of a mixing zone is allowed until such means become practicable, consistent with WQS 9.2. For phosphorus, there is no technology available for oil terminals, as the source of phosphorus is likely due to background and the large amount of stormwater present in the discharge. The permit requires the facility to implement a stormwater management plan, which will help reduce phosphorus concentrations present in stormwater.

- *Time Limit (WQS 9.3)*: Consistent with WQS 9.3, the mixing zone approval is granted for a period not to exceed five years because this permit expires after a five-year period.

- *Mixing Zone Characteristics (WQS 9.4)*: The mixing zone is defined with specified dimensions: a 63.8-meter (209 ft) radius from the CPA sewer and a corresponding dilution factor of 2.2 for pH, copper, arsenic, and zinc and a 18.95-meter (61.7 ft) radius from the CPA sewer and a corresponding dilution factor of 13.1 for phosphorus. The dilution factor is volumetric dilution (i.e. total flow/volume to effluent) as opposed to part receiving water to part effluent. The 63.8-meter (209 ft) mixing zone is less than half of the length of the harbor and ensures adequate passage for aquatic life within the harbor because the mixing zone is only 0.6 to 2.8% of the water column and mixes in less than 22 minutes. For phosphorus, different assumptions were used to model the dilution (i.e.

[2] The maximum high tide of 2.8 feet occurred once in a 365-day period.

normal tide as opposed to maximum high tide). The free fall condition is estimated to occur 99% of the time. The drift time through the phosphorus mixing zone just less than 6 minutes and is 2.8% of the water depth.

- *Criteria for Mixing Zones:* The authorized dilution is consistent with WQS 9.5. as described below:
  - *(WQS 9.5(a): Outfall).* Per the WQS, mixing must be achieved as quickly as possible using a diffuser or other apparatus that ensures the discharge is mixed within the allocated dilution water in the smallest practicable area. The discharge authorized by this permit is unique in that effluent flows through Outfall 001, located onsite, and then through 900 ft of sewer owned by the CPA. The discharge to the receiving water is at this CPA sewer location. The CPA sewer is a 6-ft. wide, 3-ft. high outfall. *See* attachment 1. The limited duration and volume of the discharge ensures that the discharge is mixed within the harbor in the smallest practicable area.

    The CPA sewer also may be above the water surface or at the water surface depending on tide. The mixing zone analysis models these two scenarios (i.e. free fall and at the water surface). EPA is applying the more conservative scenario with maximum high tides to parameters that could cause acute toxicity or have a higher likelihood of bioaccumulating. For phosphorus, normal tidal conditions are appropriate since impacts associated with nutrient occur over a longer time-period (i.e. days, months, or years as opposed to minutes).

  - *(WQS 9.5(b): ZID).* Because of the intermittent nature of the discharge, acute conditions are applicable. Therefore, the dilution for this discharge is limited by the ZID (i.e. the ZID is the authorized regulatory mixing zone). The facility discharges intermittently (i.e. 97 days during 2012-2015 or 6.6% of the time) and at a low velocity. Given the maximum effluent discharged during this timeframe, the discharge would occur over 99 minutes.[3] The ZID is the regulatory mixing zone, identified as a 63.8-meter (209 ft) radius from the CPA sewer for pH, copper, and zinc and a 18.95-meter (61.7 ft) radius from the CPA sewer for phosphorus.

  - *(WQS 9.5(c): Lethality).* Lethality must be prevented within the ZID and is the reason that the authorized mixing zones are based on the ZID. Rapid dilution is critical to this effort because it quickly reduces pollutant concentrations within the mixing zone, which results in less exposure of organisms to high pollutant concentrations. The drift time ranges between just less than 6 minutes to less than 22 minutes based on tidal conditions. However, this discharge is intermittent, with the maximum duration of the discharge being 99 minutes. Average flows result in the discharge occurring over 43 minutes/day with long-term average flows resulting in discharging only 14.8 minutes/day. These conditions ensure that lethality is prevented in the authorized mixing zones.

[3] The measured maximum discharge rate from Outfall 001 was 59,593 gpd (2.7 liter/second) during the 2012-2015 period. This excludes the maximum discharge volume of 72,048 gallons (as discussed in factsheet section IV. Description of the Discharge) because this discharge is atypical, as it is associated with the 2015 Typhoon.

- *(WQS 9.5(d) and WQS 9.5(g): Mixing Zone Boundary and Meeting WQS).* Permit provision I.A.4 ensures that the water quality criteria will be met at the boundary of the mixing zone (i.e. aquatic life and human health criteria).

- *(WQS 9.5(e): Two or More Mixing Zones).* This provision is applicable to two or more mixing zones. This authorization is the only mixing zone in the vicinity of the discharge. Therefore, a continuous zone of passage for aquatic life is available by ensuring lethality is prevented, per WQS 9.5(c) above.

- *(WQS 9.5(f): Endangered Species Considerations).* The facility utilizes an oil-water separator for wastewater treatment and discharges intermittently. Therefore, the mixing zone is not a substitute for waste treatment and is consistent with this water quality standard.

- *(WQS 9.5(h): Current).* The mixing zone is authorized for the discharge in the Tanapag Harbor, which is influenced by ocean currents and tides. However, a minimal current was used in the mixing zone analysis to provide for conservative dilution values (i.e. 0.164 feet/second). Normal and maximum high tides were modeled and used to determine available dilution and mixing zone size.

- *(WQS 9.5(i): Mixing Zone Limitations).* The mixing zone is limited in extent as practicable. The dimensions are established based on the mixing zone analysis (i.e. CORMIX). The effluent plume thickness will vary depending on the depth of the discharge (i.e. tidal influence) and will range from 0.03 to 0.14 meters (0.1 to 0.5 feet thick). The effluent plume will represent at most 2.8% of the water column.

- *(WQS 9.5(j): Ocean Discharge Criteria).* Permit provision part I.A.13 implements the ocean discharge criteria.

3. Type of Industry

According to EPA's *Technical Support Document for the 2004 Effluent Guidelines Program Plan* (2004), typical pollutants for petroleum bulk storage terminals are oil & grease, total petroleum hydrocarbons, biochemical oxygen demand, total organic carbon, ammonia, total suspended solids, phenols, total dissolved solids, naphthenic acids, aromatics (benzene, toluene, ethylbenzene, xylene), and surfactants. Benzene, toluene, ethylbenzene and xylene are the more volatile components of petroleum hydrocarbons. These pollutants are usually present in petroleum products, and are most associated with petroleum products with lighter ranges of hydrocarbons, such as gasoline.

Although all gasoline currently stored at the facility is unleaded, the discharger believes lead may be present as a residual in the storage tanks from historic terminal operations. Similarly, the discharger believes arsenic, copper, chromium, and nickel may be present as natural soil constituents and as corrosion products of metal vessels, pipes, and structures.

4. History of Compliance Problems and Toxic Impacts

During Typhoon Soudelor in August 2015, Tank 10 leaked and/or spilled. However, the facility reported that discharges from the facility did not caused any known compliance problems or toxic impacts.

5. Existing Data on Toxic Pollutants – Reasonable Potential Analysis

EPA conducted a reasonable potential analysis based on statistical procedures outlined in EPA's *TSD* (1991). These statistical procedures calculate the projected maximum effluent concentration based on available monitoring data to account for effluent variability and a limited data set. EPA estimated the projected maximum effluent concentrations assuming a coefficient of variation of 0.6 and a 95 % confidence interval. (EPA 1991). EPA calculated the projected maximum effluent concentration for each pollutant using the following equation:

Projected maximum concentration = C_e × *reasonable potential multiplier factor*.

Where, "C_e" is the reported maximum effluent value, and the multiplier factor is obtained from Table 3-1 of the *TSD*. (EPA 1991).

Table 4. Summary of Reasonable Potential Statistical Analysis

Parameter[(1)]	Units	Max Observed Concentration (Conc.)	*n*	RP Multiplier[(2)]	Projected Max. Effluent Conc.	Most Stringent WQC[(3)]	Statistical Reasonable Potential?
pH	S.U.	7.2 to 9.2	42	--	--	7.6 to 8.6	Y
E. coli	MPN/100	7.4	1	--	--	126	N
Phosphorus	mg/L	0.11	1	13.2	1.45	0.05	Y
Arsenic	µg/L	2.2	4	4.7	10.3	5	Y
Ammonia, unionized	µg/L	2.9	43	2.3	6.67	20	N
Iron	mg/L	0.517	1	13.2	6.82	300	N
Chromium, total	µg/L	1.6	4	4.7	7.5	--[(4)]	N
Copper	µg/L	7.5	4	4.7	35.3	3.1	Y
Lead	µg/L	102	43	2.3	234.6	8.1	Y
Manganese	µg/L	26.2	1	13.2	345.8	100	Y
Nickel	µg/L	1.3	4	4.7	6.1	8.2	N
Antimony	µg/L	0.224	4	4.7	1.053	640	N
Zinc	µg/L	233	4	4.7	1,095	81	Y
Benzene	µg/L	7.6	43	2.3	17.5	16[(5)]	Y

Parameter[1]	Units	Max Observed Concentration (Conc.)	*n*	RP Multiplier[2]	Projected Max. Effluent Conc.	Most Stringent WQC[3]	Statistical Reasonable Potential?
Ethylbenzene	µg/L	1.2	43	2.3	2.8	130	N
Toluene	µg/L	70	43	2.3	161	520	N
Naphthalene	µg/L	4.5	16	2.5	11.3	--[4]	N

(1) Only parameters with detected Maximum Observed Concentration are included in the RP analysis. Bromide, sulfate, aluminum, barium, magnesium, and titanium were detected in the discharge but are not presented in the RP analysis because no water quality criteria exist for the pollutant (i.e. no EPA criteria under CWA 304(a) and no criteria in the *CNMI Water Quality Standards*).

(2) RP multiplier is based on 95% probability using (n) and on a coefficient of variation (CV) of 0.6. Because of data variability and of small sample sizes (i.e. n = 4), EPA used a CV of 0.6 for all parameters.

(3) The most stringent water quality criteria are based on chronic aquatic life criteria or human health organisms only criteria. The *CNMI Water Quality Standards* for aquatic life reference EPA's aquatic life criteria promulgated under CWA section 304(a) and reference EPA's 2013 human health criteria organism only criteria for waters not designated as a source of public water supply, such as the Tanapag Harbor. The exception is arsenic, which is 5 µg/L, per the *CNMI Water Quality Standards*.

(4) Because Class A waters do not include water supply as a designated use, any maximum contaminant levels are not applicable. EPA does not have criteria for naphthalene and total chromium (i.e. only chromium IV and chromium III).

(5) EPA's human health criteria for organism only is a range of 16 to 58 µg/L. However, in EPA's update of human health ambient water quality for benzene (2015), EPA recommends using the lower criteria based on the carcinogenic effects of benzene. *See* EPA 820-R-15-009.

C. Rationale for Numeric Effluent Limits and Monitoring

EPA evaluated the typical pollutants expected to be present in the effluent and selected the most stringent of applicable technology-based standards or water quality-based effluent limitations. For pollutants with effluent limits, the permit includes only daily maximum effluent limit because the discharge is intermittent (i.e. maximum 99 minutes per day). Where effluent concentrations of toxic parameters are unknown or are not reasonably expected to be discharged in concentration that have the reasonable potential to cause or contribute to water quality violations, EPA may establish monitoring requirements in the permit.

Where monitoring is required, data will be re-evaluated and the permit may be re-opened to incorporate effluent limitations as necessary. The permit includes a reopener provision that allows effluent limits to be established if reported data demonstrates reasonable potential to cause or contribute to an exceedance of applicable water quality standards.

Discharge Flow Monitoring

The typical treatment technology employed by petroleum bulk storage terminals for wastewater is usually an oil-water separator. This device separates the lower-density oils from water; resulting in an oil phase above the oil-water interface and a heavier particulate phase (i.e. sludge) on the bottom of the separator. Accordingly, the sizing of an oil-water separator is based upon: water-flow rate; density of oil to be separated; desired percentage removal of oil; and the operating temperature range. To ensure proper operation of installed oil-water separators, such that the oil and/or particulate phases are not entrained to the waterway, it is important that the

flow through the separator be maintained at or below the maximum design flow rate of the separator. Therefore, the draft permit contains a monitoring requirement and shall be taken as a field measurement at the time of sampling during each discharge.

Oil and Grease Effluent Limit

The permit contains a technology-based daily maximum effluent limit of 15 mg/L for oil and grease. The effluent limit for oil and grease is based on BPJ since (1) there are no applicable effluent limitation guidelines and performance standards for oil and grease, and (2) similar industrial facilities have shown that 15 mg/l can be easily achieved by an oil-water separator. Section 402(a)(1) of the Clean Water Act (CWA) provides for the establishment of BPJ-based effluent limits when effluent limitation guidelines and performance standards are not available for a pollutant of concern. The limit is consistent with similar facilities that treat oily wastewater and stormwater. Narrative water quality-based limits for oil and grease also are included since oil and grease are commonly found in wastewater and stormwater from similar bulk petroleum storage facilities.

TSS Effluent Limit

EPA proposes a technology-based effluent limitation for TSS based on BPJ of 100 mg/L as a daily maximum. The effluent limit for TSS is based on BPJ since (1) there are no applicable effluent limitation guidelines and performance standards for TSS, and (2) TSS is a good indicator of effluent stormwater quality. Specifically, the release of heavy metals and polycyclic aromatic hydrocarbons (PAHs) can be reduced by regulating the amount of suspended solids discharged.

Section 402(a)(1) of the CWA provides for the establishment of BPJ-based effluent limits when effluent limitation guidelines and performance standards are not available for a pollutant of concern. The limit is also consistent with similar facilities that treat oily wastewater and stormwater and is consistent with EPA's MSGP. *See* table 5 below. Narrative water quality-based limits for TSS also are included consistent with CNMI's *Water Quality Standards*.

Table 5. Effluent Limitations for TSS in NPDES Permits Authorizing Discharges from Oil Terminals/Tank Farms

State	Monthly Average	Daily Maximum
Maine[1]	50 mg/L	100 mg/L
Massachusetts[2]	30 mg/L	100 mg/L
Tennessee[3]	30 mg/L	45 mg/L
South Carolina[4]	--	100 mg/L
California[5]	--	75 mg/L
Washington[6]	30 mg/L	45 mg/L

1 https://www3.epa.gov/region1/npdes/permits/2010/finalme0022225permit.pdf
2 https://www3.epa.gov/region1/npdes/permits/2014/finalma0001929permit.pdf and https://www3.epa.gov/region1/npdes/permits/draft/2014/draftma0001091permit.pdf
3 http://in.gov/idem/cleanwater/files/permit_notice_petroleum_draft_factsheet.pdf
4 https://www.scdhec.gov/environment/docs/scg340000.pdf
5 http://63.199.216.6/permits/docs/6297_R4-2016-0219_WDR_PKG.pdf and http://63.199.216.6/permits/docs/7873_R4-2016-0142_WDR_PKG.pdf

6 https://fortress.wa.gov/ecy/wqreports/public/WQPERMITS.document_pkg.download_document?p_document_id=119992 and https://fortress.wa.gov/ecy/wqreports/public/WQPERMITS.document_pkg.download_document?p_document_id=133872

pH Effluent Limit

Reasonable potential exists for pH since the range of reported values were higher and lower than the water quality criteria. Therefore, an effluent limit is included in the permit for pH. The pH effluent limit includes a dilution factor of 2.2 based on the 63.8-meter (209 ft) mixing zone and is based on the facility's past data. From the permittee's mixing zone analysis, the predicted pH values at the edge to the mixing zone (based on the ZID) meet water quality standards. The calculated pH values are within the pH range of 7.6 to 8.6 SU. *See* Table 6, below:

Table 6. Verifying pH WQS at edge of mixing zone (Dilution factor 2.2) using pH effluent limits of 7.2 S.U. (left) to 9.2 S.U. (right)

Calculation of pH of a Mixture in Marine Water

Based on the CO2SYS program (Lewis and Wallace, 1998), http://cdiac.esd.ornl.gov/oceans/co2rprt.html

INPUT	
1. MIXING ZONE BOUNDARY CHARACTERISTICS	
Dilution factor at mixing zone boundary	2.2
Depth at plume trapping level (m)	0.100
2. BACKGROUND RECEIVING WATER CHARACTERISTICS	
Temperature (deg C):	28.90
pH:	7.90
Salinity (psu):	34.50
Total alkalinity (meq/L)	2.36
3. EFFLUENT CHARACTERISTICS	
Temperature (deg C):	29.00
pH:	7.20
Salinity (psu)	0.50
Total alkalinity (meq/L):	2.00
4. CLICK THE 'Calculate" BUTTON TO UPDATE OUTPUT RESULT:	Calculat
OUTPUT	
CONDITIONS AT THE MIXING ZONE BOUNDARY	
Temperature (deg C):	28.95
Salinity (psu)	19.05
Density (kg/m^3)	1010
Alkalinity (mmol/kg-SW):	2.17
Total Inorganic Carbon (mmol/kg-SW):	2
pH at Mixing Zone Boundary:	**7.71**

Calculation of pH of a Mixture in Marine Water

Based on the CO2SYS program (Lewis and Wallace, 1998), http://cdiac.esd.ornl.gov/oceans/co2rprt.html

INPUT	
1. MIXING ZONE BOUNDARY CHARACTERISTICS	
Dilution factor at mixing zone boundary	2.2
Depth at plume trapping level (m)	0.100
2. BACKGROUND RECEIVING WATER CHARACTERISTICS	
Temperature (deg C):	28.90
pH:	7.90
Salinity (psu):	34.50
Total alkalinity (meq/L)	2.36
3. EFFLUENT CHARACTERISTICS	
Temperature (deg C):	29.00
pH:	9.20
Salinity (psu)	0.50
Total alkalinity (meq/L):	2.00
4. CLICK THE 'Calculate" BUTTON TO UPDATE OUTPUT RESULTS -->	Calculat
OUTPUT	
CONDITIONS AT THE MIXING ZONE BOUNDARY	
Temperature (deg C):	28.95
Salinity (psu)	19.05
Density (kg/m^3)	1010
Alkalinity (mmol/kg-SW):	2.17
Total Inorganic Carbon (mmol/kg-SW):	2
pH at Mixing Zone Boundary:	**8.42**

Total Phosphorus

Reasonable potential exists for phosphorus since the maximum effluent concentration (0.11 mg/L) is higher than the water quality standard of 0.05 mg/L. Therefore, an effluent limit is included in the permit. The total phosphorus effluent limit includes a dilution factor of 2.2 based on the 63.8-meter (209 ft) mixing zone. *See* attachment A.

Metals: Arsenic, Copper, Lead, and Zinc Effluent Limits

The *CNMI Water Quality Standards* for aquatic life reference EPA's aquatic life criteria promulgated under section 304(a) of the CWA. All metals where compared to EPA's aquatic life criteria, except for arsenic. The *CNMI Water Quality Standards* include a numeric standard for arsenic of 5 µg/L. Using the procedures in EPA's TSD (1991), reasonable potential exists for

arsenic, copper, lead, and zinc, and therefore, effluent limits are included for these metals. The effluent limits incorporate a dilution factor of 2.2 based on a 63.8-meter (209 ft) mixing zone. *See* attachment A.

Benzene Effluent Limit

Refined petroleum products contain numerous types of hydrocarbons. As common with bulk petroleum storage facilities, benzene, toluene, ethylbenzene and xylene ("BTEX") was detected in various concentrations. EPA also is limiting benzene as an indicator parameter for BTEX. Rather than regulating every compound detected in the discharge, limits may be established for compounds that would be the most difficult to remove in oil-water separators or demonstrate the greatest degree of toxicity. Benzene was selected because of the BTEX compounds, benzene has the highest solubility, is one of the most toxic constituents, and is found at relatively high concentrations in light distillates and diesel fuels.

EPA considered a technology-based effluent limit for benzene. Examples of benzene TBELS for oil terminal are shown in the table below:

State	Permit Number	Average Monthly (ug/L)	Daily Maximum (ug/L)
Texas	TXG 340000		50
Hawaii	Chapter 11-55, Appendix H		1700
Wisconsin	WI-0046531-05-0	750	50
Tennessee	TN0022462 and TN0000108		500

However, EPA is establishing an effluent limit for benzene based on water quality. Using the procedures in EPA's TSD (1991), reasonable potential exists and therefore, an effluent limit is included in the permit for benzene. The permit contains a benzene effluent limit based on a conservative human health criterion of 16 ug/L. The effluent limit incorporates a dilution factor of 2.2 based on a 63.8-meter (209 ft) mixing zone. *See* attachment A.

EPA believes this value is protective of the recreation designated use of the receiving water. Most people can begin to taste benzene in water at 0.5 to 4.5 ppm. EPA has set 5 ppb as the maximum permissible level of benzene in drinking water. While this receiving water is not designated as a drinking water source, EPA has set a goal of 0 ppb for benzene in both drinking water and in other waterbodies (i.e. rivers and lakes) because benzene can cause leukemia. Additionally, the selected human health criterion is consistent with EPA's 2015 update to the recommended benzene water quality criteria, which states that the lower value should be used based on the carcinogenic effects of benzene. This criterion was developed to protect humans from long-term (i.e. lifetime) exposures to waterborne chemicals and are not intended to reflect fluctuations in bioaccumulation over short periods (i.e. a few days). Therefore, this criterion is applicable despite the intermittent nature of the facility's discharge. *See* U.S. Department of

Health and Human Services Toxicological Profile for Benzene (2007) and U.S EPA Update of Human Health Ambient Water Quality Criteria: Benzene (2015) [4].

Temperature, BOD, and Salinity Quarterly Monitoring

No limits are established for temperature, BOD, or salinity. However, quarterly monitoring is required since these pollutants are common in tank bottom water draws. Salinity monitoring is included to assess the salt levels in the process wastewater being discharge. Monitoring for temperature and BOD will help determine whether the narrative permit requirements for temperature and BOD are being met. Temperature and salinity shall be taken as field measurements at the time of sampling during each discharge.

Bacteria (Enterococci) Annual Monitoring

While the facility does not engage in activities that would be expected to generate large sources of bacteria, stormwater runoff can readily transport bacteria from surfaces susceptible to the waste products of animals or pathogens, which attach to organic and inorganic particles. As described in Section III. Description of the Receiving Water, the harbor is impaired for enterococci. The water quality standards contain enterococci water quality criteria applicable to all waters. Therefore, the draft permit includes an annual monitoring requirement for enterococci to ensure bacteria are not present at concentrations that could cause or contribute to an excursion above water quality standards. Inclusion of monitoring for a pollutant for which the receiving water is impaired is also consistent with EPA's MSGP for discharges of industrial stormwater.

Total Polycyclic Aromatic Hydrocarbons Annual Monitoring

Polycyclic aromatic hydrocarbons ("PAHs") are a group of organic compounds that form through the incomplete combustion of hydrocarbons and are present in petroleum derivatives and residuals. There are 16 PAH compounds identified as priority pollutants. Group I and Group II PAHs[5] were not detected above the laboratory minimum level ("MLs"), except for naphthalene.[6] However, MLs are often two to six times the recommended water quality criteria. Therefore, EPA cannot assume PAHs are not present above the 304(a) water quality criteria where a sample is non-detect, but the ML is insufficient. Therefore, EPA is requiring monitoring for Group I and Group II PAHs once per year. Monitoring data shall be reported for each group as well as for each pollutant. The permittee also is required to report the ML for each pollutant not detected above the ML.

[4] https://www.epa.gov/sites/production/files/2014-03/documents/benzene_toxicological_profile_tp3_3v.pdf and EPA-820-R-15-2009.

[5] Group I PAHs are comprised of seven known carcinogens: 1) benzo(a)anthracene, 2) benzo(a)pyrene, 3) benzo(b)fluoranthene, 4) benzo(k)fluoranthene, 5) chrysene, 6) dibenzo(a,h)anthracene, and 7) indeno(1,2,3-cd)pyrene. Group II PAHs are comprised of nine priority pollutant PAHs which are not considered carcinogens: 1) acenaphthene, 2) acenaphthylene, 3) anthracene, 4) benzo(g,h,i)perylene, 5) fluoranthene, 6) fluorene, 7) naphthalene, 8) phenanthrene, and 9) pyrene.

[6] Naphthalene is a common, relatively light, semi-volatile PAH found in petroleum products. Naphthalene is commonly found in heavier fuels, such as fuel oil or diesel. However, no criteria exist for naphthalene and therefore, EPA is proposing a quarterly monitoring requirement for total PAHs.

Chromium III and Chromium IV Annual Monitoring

While the facility does not engage in activities that would be expected to generate large concentrations of chromium, total chromium was detected in the discharge. Because monitoring data are not available for chromium III and IV for the discharge, EPA has included annual monitoring requirements to ensure the metal is not present in quantities that could cause or contribute to an excursion above water quality criteria. EPA is required by 40 CFR Section 122.45(c) to express NPDES permit requirements as "total recoverable metals" (i.e. total recoverable hexavalent chromium and total recoverable trivalent chromium).

D. Anti-Backsliding

Section 402(o) of the CWA prohibits the renewal or reissuance of an NPDES permit that contains effluent limits less stringent than those established in the previous permit, except as provided in the statute. The previous permit only included an oil and grease effluent limit, which is being maintained in this permit. The permit also includes additional effluent limits based on BPJ and reasonable potential. Reissuance of this permit meets federal backsliding requirements.

E. Antidegradation Policy

EPA's antidegradation policy at 40 CFR 131.12 and *CNMI Water Quality Standards* require that existing water uses and the level of water quality necessary to protect the existing uses be maintained. The permit contains effluent limits and monitoring requirements to ensure that all applicable water quality standards are met, including EPA's antidegradation policy at 40 CFR 131.12 and the antidegradation conditions in *CNMI Water Quality Standards*.

VI. NARRATIVE WATER QUALITY-BASED EFFLUENT LIMITS

CNMI Water Quality Standards contain narrative water quality standards applicable to the receiving water. EPA is retaining the narrative effluent limits to implement CNMI narrative water quality criteria.

VII. MONITORING AND REPORTING REQUIREMENTS

The permit requires the discharger to conduct monitoring for all pollutants or parameters where effluent limits have been established once per discharge. Grab samples are appropriate when a sample is needed to monitor a non-continuous discharge and allow collection of a variable sample volume. Grab samples are required for all parameters, except for flow and pH, because the discharge is intermittent. (40 CFR 136). Continuous metered monitoring of flow and pH is retained in the permit.

A. Effluent Monitoring and Reporting

The permittee shall conduct effluent monitoring to evaluate compliance with the proposed permit conditions. The permittee shall perform all monitoring, sampling and analyses in accordance with the methods described in the most recent edition of 40 CFR 136, unless otherwise specified in the proposed permit. All monitoring data shall be reported on monthly

DMRs and submitted quarterly as specified in the proposed permit. All DMRs are to be submitted electronically to EPA using NetDMR.

B. Receiving Water Visual Monitoring for Oily Sheen, Foam, Discoloration, or Floating Debris

Additional parameter monitoring is required to determine compliance with narrative *CNMI Water Quality Standards*. The permittee shall notify EPA and BECQ of receiving water conditions at Outfall 001A if oily sheen, foam, discoloration, or floating debris occurs. Receiving water monitoring shall be conducted once per quarter while there is discharge from the facility and shall be submitted as an attachment to the DMRs.

Because discharge at Outfall 001A does not solely originate from the Mobil facility, but also from other Port tenants, if the permittee believes that any sheen, foam, discoloration, or floating debris is not originating from the Mobil facility, an explanation for this reasoning shall be included. Receiving water visual monitoring may be conducted and submitted by the Saipan Sea Port, instead of by Mobil, if it satisfies the monitoring requirements in the permit. Receiving water visual monitoring is necessary to assess compliance with narrative water quality-based effluent limits for Tanapag Harbor (Part VI of this fact sheet).

VIII. SPECIAL CONDITIONS

A. Development and Implementation of Best Management Practices

Pursuant to 40 CFR 122.44(k)(4), EPA may impose BMPs which are "reasonably necessary…to carry out the purposes of the Act." The pollution prevention requirements or BMPs in the permit operate as technology-based limitations on effluent discharges that reflect the application of Best Available Technology and Best Control Technology. Therefore, the permit requires that the permittee develop (or update) and implement a Pollution Prevention Plan with appropriate pollution prevention measures or BMPs designed to prevent pollutants from entering Tanapag Harbor and other surface waters while performing normal processing operations at the facility.

As stormwater runoff from the yard area at the facility will not be treated by the oil-water separator, the permittee shall develop and implement BMPs that are necessary to control pollutant discharge, including oil and grease, from this area.

The permittee is also required to maintain and update as necessary their Spill Prevention, Control and Countermeasure Plan in accordance with 40 CFR 112.

IX. OTHER CONSIDERATIONS UNDER FEDERAL LAW

A. Impact to Threatened and Endangered Species

Section 7 of the Endangered Species Act of 1973 (16 U.S.C. § 1536) requires federal agencies to ensure that any action authorized, funded, or carried out by the federal agency does

not jeopardize the continued existence of a listed or candidate species, or result in the destruction or adverse modification of its habitat.

Since the issuance of NPDES permits by the EPA is a federal action, consideration of the permitted discharge and its effect on any listed or candidate species or their critical habitat is appropriate. EPA confirmed the listed species, in table 6, with U.S. FWS on February 28, 2017 and with the National Marine Fisheries Service on March 1, 2017.

Table 6. Listed species, designated under the U.S. Endangered Species Act

Type	Common Name	Scientific Name	Status	Critical Habitat[1]
National Marine Fisheries Service				
Corals		*Acropora globiceps*	T	No
		Seriatopora aculeata	T	No
Mammals	Green Sea turtle[2]	*Chelonia mydas (incl. agassizi)*	T	No
	Hawksbill turtle[2]	*Eretmochelys imbricate*	E	No
U.S. Fish and Wildlife Service Species Associated with Ocean Habitats				
Birds	Mariana Common Moorhen	*Gallinula chloropus guami*	E	No
	Nightingale Reed-Warbler	*Acrocephalus luscinia sp.*	E	No

1 Critical habitat is defined as specific areas: (1) within the geographical area occupied by the species at the time of listing, if they contain physical or biological features essential to conservation, and those features may require special management considerations or protection; and (2) outside the geographical area occupied by the species if the agency determines that the area itself is essential for conservation.
2 The species also is under the jurisdiction of the U.S. FWS.

Corals

The *Seriatopora aculeate* and the *Acropora globiceps* have been reported in CNMI. *Seriatopora aculeate* occurs in a broad range of habitats on the reef slope and back-reef, including but not limited to upper reef slopes, mid-slope terraces, lower reef slopes, reef flats, and lagoons in a depth range to 3 to 40 meters. *Acropora globiceps* occurs on upper reef slopes, reef flats, and adjacent habitats in depths ranging from 0 to 8 meters.

Corals, in general, are susceptible to the three major threats: ocean warming, disease, and ocean acidification. Corals that occur in shallow reef areas are subjected to frequent changes in environmental conditions, extremes, high irradiance, and simultaneous effects from multiple stressors, both local and global in nature.

Marine Mammals: Green Sea Turtle and Hawksbill Turtle

The green turtle is globally distributed and generally found in tropical and subtropical waters along continental coasts and islands. Nesting occurs in over 80 countries and thought to inhabit coastal areas of more than 140 countries. Green turtles eat a variety of plants and animals, but adults feed almost exclusively on seagrass and marine algae. Green turtles are generally found in shallow waters, except when migrating. Critical habitat is designated in waters around Puerto Rico. Fibropapillomatosis, a disease of sea turtles characterized by the development of multiple tumors on the skin and internal organs, is a mortality factor and has seriously affected green turtle populations in Florida, Hawaii, and other parts of the world.

Hawksbills are found mainly throughout the world's tropical oceans, predominantly in coral reefs. This species can be found nesting and foraging in Pacific U.S. territories but research on the population status and trends in these areas is on-going. They feed mainly on sponges by using their narrow-pointed beaks to extract them from crevices on the reef but also eat sea anemones and jellyfish. Like other sea turtles, hawksbills are threatened by the loss of nesting and feeding habitats, excessive egg collection, fishery-related mortality, pollution, and coastal development. They are also threatened by wildlife trade.

Birds: Mariana Common Moorhen and the Nightingale Reed Warbler

The Mariana common moorhen is an inhabitant of emergent vegetation in freshwater marshes, ponds and placid, rivers. Moorhens in the Mariana Islands are found primarily at freshwater natural and artificially created wetlands that are both seasonal and permanent. Occasionally, they are recorded in brackish water wetlands. Wetlands that support about equal amounts of emergent, submergent, and/or floating vegetation and open water are more suitable to moorhens for feeding, nesting, and loafing than wetlands that are predominately open water or that support mostly emergent wetland vegetation. In the Mariana Islands, moorhens have been recorded at golf course wetlands, commercial fish ponds, sewage treatment plants, wetlands created for the mitigation of wetland loss, as well as at natural wetlands.

Moorhens feed on both plant and animal matter in or near water. The Mariana common moorhen appears to be active both during the day and at night. Some evidence even suggests that moorhens fly primarily at night. Because moorhens require wetlands with specific criteria for vegetative cover as well as depth, the most serious threat to the continued existence of the moorhen include the continuing disappearance of suitable wetland habitat.

Most nightingale reed-warblers found on the island of Saipan occur in thicket-meadow mosaics, tangantangan (*Leucaena leucocephala*), reed marshes, and wetlands. The Saipan Upland Mitigation Bank (419 hectares - 1,035 acres) in the major region of Saipan was established mainly to protect the Nightingale Reed-warbler. They have been observed to feed on insects, spiders, snails, and lizards. Past and present threats to populations include loss and degradation of habitat (including wetland destruction and degradation due to feral ungulates), predation by introduced predators such as the brown treesnake, rats, and monitor lizard, and vulcanism.

No Effect Determination

EPA believes that this permit reissuance will not affect any federally listed threatened and endangered species under the NOAA National Marine Fisheries or U.S. FWS jurisdictions that may be present in the discharge area. The permit is a reissuance for an existing facility. No new construction, new pipes, land, habitat, or hydrology alterations are associated with the permit reissuance.

EPA drafted this permit to protect the beneficial uses of the receiving water, which include propagation and preservation of aquatic wildlife. The permit contains technology and water quality-based effluent limits to ensure pollutants present in the discharge will not affect listed

species. The mixing zone for pH, phosphorus, copper, and zinc is limited in spatial extent and represent critical conditions. The effluent limitations in the draft permit are all as stringent as or equally protective as those in the previous permit. The effluent limits in the permit also will not result in acute or chronic exposures to contaminants that would affect federally listed threatened and endangered species, or impair any designated critical habitat. Therefore, EPA believes that the permit conditions will not affect the availability or distribution of prey species or produce undesirable aquatic life.

If, in the future, EPA obtains information or is provided information that indicates that there could be adverse impacts to federally listed species, EPA will contact the appropriate agency or agencies and initiate consultation, to ensure that such impacts are minimized or mitigated. EPA believes that a NO EFFECT determination is appropriate for the listed endangered or threatened species. EPA has forwarded a copy of the draft permit and this fact sheet to U.S. FWS and NMFS for review and comment on conclusions concerning the effects of the proposed permit on listed species during the public comment period.

B. Impact to Coastal Zones

The Coastal Zone Management Act ("CZMA") requires that Federal activities and licenses, including Federally permitted activities, must be consistent with an approved state Coastal Management Plan (CZMA Sections 307(c)(1) through (3)). Section 307(c) of the CZMA and implementing regulations at 40 CFR 930 prohibit EPA from issuing a permit for an activity affecting land or water use in the coastal zone until the applicant certifies that the proposed activity complies with the State (or Territory) Coastal Zone Management program, and the Territory or its designated agency concurs with the certification.

In CNMI, the lead agency responsible for performing Coastal Zone Management consistency reviews is the Coastal Resource Management Office ("CRMO"). EPA provided copies of the draft permit and fact sheet to the CRMO for review and comment during the public notice period. Per the CRMO's consistency procedures, an applicant that seeks a Federal permit or license must submit consistency certification to the CRMO. If the CRMO objects to the consistency certification, the Federal agency (in this case, EPA) cannot issue the license or permit. *See* http://www.crm.gov.mp/sec.asp?secID=37. EPA has informed the permittee that it must work with the CRMO to develop and submit a consistency certification to gain coverage under the permit.

C. Impact to Essential Fish Habitat

The 1996 amendments to the Magnuson-Stevens Fishery Management and Conservation Act ("MSA") set forth several new mandates for the National Marine Fisheries Service ("NMFS"), regional fishery management councils and other federal agencies to identify and protect important marine and anadromous fish species and habitat. The MSA requires Federal agencies to make a determination on Federal actions that may adversely impact Essential Fish Habitat ("EFH").

The permit contains technology-based effluent limits and numerical and narrative water quality-based effluent limits as necessary for the protection of applicable aquatic life uses. Furthermore, the permit contains a re-opener provision for numeric effluent limits to be

established if any parameters demonstrate potential to exceed or contribute to an exceedance of *CNMI Water Quality Standards* for the protection of marine life. Therefore, EPA has determined that the permit will not affect essential fish habitat. EPA will provide copies of the draft permit and fact sheet to NMFS for review and comment during the public notice period.

D. Impact to National Historic Properties

Section 106 of the National Historic Preservation Act ("NHPA") requires federal agencies to consider the effect of their undertakings on historic properties that are either listed on, or eligible for listing on, the National Register of Historic Places. Pursuant to the NHPA and 36 CFR §800.3(a)(1), EPA is making a determination that issuing this NPDES permit does not have the potential to affect any historic properties or cultural properties.

As a result, Section 106 of the Act does not require EPA to undertake additional consulting on this permit issuance.

X. STANDARD CONDITIONS

A. Reopener Provision

In accordance with 40 CFR 122 and 124, this permit may be modified by EPA to include effluent limits, monitoring, or other conditions to implement new regulations, including EPA-approved water quality standards; or to address new information indicating the presence of effluent toxicity or the reasonable potential for the discharge to cause or contribute to exceedances of water quality standards.

B. Standard Provisions

The permit requires the permittee to comply with EPA Region IX Standard Federal NPDES Permit Conditions, dated July 1, 2001.

XI. ADMINISTRATIVE INFORMATION

A. Public Notice (40 CFR 124.10)

The public notice is the vehicle for informing all interested parties and members of the general public of the contents of a draft NPDES permit or other significant action with respect to an NPDES permit or application.

B. Public Comment Period (40 CFR 124.10)

Notice of the draft permit must be placed in a daily or weekly newspaper within the area affected by the facility or activity, with a minimum of 30 days provided for interested parties to respond in writing to EPA. After the closing of the public comment period, EPA is required to respond to all significant comments at the time a final permit decision is reached or at the same time a final permit is actually issued.

C. Public Hearing (40 CFR 124.12(c))

A public hearing may be requested in writing by any interested party. The request should state the nature of the issues proposed to be raised during the hearing. A public hearing will be held if EPA determines there is a significant amount of interest expressed during the 30-day public comment period or when it is necessary to clarify the issues involved in the permit decision.

D. Water Quality Certification Requirements (40 CFR 124.53 and 124.54)

For States, Territories, or Tribes with EPA approved water quality standards, EPA requests certification from the affected State, Territory, or Tribe that the permit will meet all applicable water quality standards. Certification under section 401 of the CWA shall be in writing and shall include the conditions necessary to assure compliance with referenced applicable provisions of sections 208(e), 301, 302, 303, 306, and 307 of the CWA and appropriate requirements of Territory law. EPA will request water quality certification under CWA section 401 from BECQ.

XII. CONTACT INFORMATION

Comments, submittals, and additional information relating to this proposal may be directed to:

Becky Mitschele, (415) 972-3492 or mitschele.becky@epa.gov
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XIII. REFERENCES

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Attachment A. Maximum Daily Water-Quality Based Effluent Limitation Calculations for Phosphorus, Arsenic, Copper, Manganese, Zinc, and Benzene.

Derivation of permit limits based on Section 5.4.1 of EPA's TSD. (EPA 1991). Dilution factor of 2.2 used, except for phosphorus, where a dilution factor of 13.1 is used.

Effluent Derivation from Single, Steady-State Model[1]	**Phosphorus[2]**	**Arsenic**	**Manganese**	**Benzene**
Water Quality Criterion, µg/L	50	5	100	16
Dilution Credit Authorized	13.1	2.2	2.2	2.2
Background Concentration, µg/L	0	3[3]	0	0
WLA, µg/L	655	2.38	70.6	11.3
Coefficient of Variation	0.6	0.6	0.6	0.6
WLA Multiplier (99th%)[4]	0.321	0.321	0.321	0.321
LTA, µg/L	210.3	2.38	70.62	11.3
LTAMDL Multiplier (99th%)[4]	3.11	3.11	3.11	3.11
MDL, µg/L	***655***	***7.4***	***220***	***35.2***

(1) Single, steady-state models are used for protection of human health, since only a single long-term ambient value is of concern.
(2) The CNMI water quality standards expresses the phosphorus water quality criteria as a single value. EPA interpreted the criterion as "phosphorus concentration must not exceed 0.05 mg/L." Where there is only one water quality criterion, and therefore, only one WLA, permit limits can be derived by considering the single WLA to be the chronic WLA.
(3) Natural arsenic background concentrations were not available. A background arsenic concentration of 3 µg/L is assumed here based on other permits EPA Region 9 issues in federal waters off the coast of California.
(4) All calculations use the 99th percentile z statistic for calculation of long-term averages and permit limits.

Effluent Derivation from Two-Value, Steady-State Model	**Copper**	**Zinc**
Acute Water Quality Criterion, µg/L	4.8	90
Chronic Water Quality Criterion, µg/L	3.1	81
Dilution Credit Authorized	2.2	2.2
Background Concentration, µg/L	2[1]	8[1]
WLA_{acute}, µg/L	8.2	188.4
$WLA_{chronic}$, µg/L	4.4	168.6
Coefficient of Variation	0.6	0.6
WLA Multiplier	0.321	0.321
LTA, µg/L	2.33	60.48
LTAMDL Multiplier	3.11	3.11
MDL, µg/L	***7.3***	***188.4***

(1) Natural background concentrations were not available. These background concentrations are assumed based on other permits EPA Region 9 issues in federal waters off the coast of California.